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Bureau of Land Management

Environmental Assessment
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El Capitan Allotment Lease Renewal
Lease number 4504

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It is the mission of the Bureau of Land Management to sustain the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations.

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1. INTRODUCTION

1.1. Background

The Bureau of Land Management (BLM) is proposing to renew a 10 year grazing lease on the El Capitan allotment (Lease No. 04504). The El Capitan allotment is located in Gila County, approximately 17 miles south of Globe, Arizona. State Route (SR) 77 runs through the allotment from north to south. This allotment is administered under Section 15 of the Taylor Grazing Act in the Winkelman area. The allotment is located within the boundaries of the BLM's Tucson Field Office (FO). The public lands in the allotment are surrounded by private land and state land. There is no fencing between public, private, or state land. The El Capitan allotment is approximately 1,991 acres in size: 680 acres are public lands while 791 acres are state lands and 520 acres are private (Figure 1). The allotment lies within Category 3 Sonoran Desert Tortoise habitat. A Rangeland Health Evaluation (RHE) was prepared for the El Capitan allotment in 2013 (BLM 2013).

This Environmental Assessment (EA) has been prepared to analyze and disclose the potential environmental consequences associated with the Proposed Action and alternatives for livestock management on the El Capitan allotment. The analysis was conducted in accordance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations implementing NEPA (40 Code of Federal Regulations (CFR) 1500-1508), and direction provided under Bureau of Land Management's (BLM) NEPA Handbook H-1790-1 (2008).

1.2. Purpose and Need for Action

The purpose of this action is to consider livestock grazing opportunities on public lands where consistent with management objectives, including the BLM Arizona Standards for Rangeland Health and Guidelines for Livestock Grazing Management (Rangeland Health Standards) (BLM 1997).

The need for this action is established by the Taylor Grazing Act, the Federal Land Policy and Management Act, Fundamentals of Range Health (43 CFR 4180), and the Safford Resource Management Plan (RMP) (BLM 1992 and 1994) to respond to an application for renewal of an expiring livestock grazing lease to graze livestock on public land. In detail, the analysis of the actions is needed because:

- The Safford District RMP identifies resource management objectives and management actions that establish guidance for managing a broad spectrum of land uses and allocations for public lands in the Tucson Field Office. The RMP allocated public lands within the El Capitan allotment as available for domestic livestock grazing. Where consistent with the goals and objectives of the RMP and Land Health Standards, the issuance of grazing permits or leases to qualified applicants are provided for by the Taylor Grazing Act and the Federal Land Policy and Management Act.
- BLM Arizona adopted the Arizona Rangeland Health Standards (Land Health Standards) and Guidelines for Livestock Grazing Management (Arizona S&Gs) in all Land Use Plans in 1997 (Appendix A). The Land Health Standards and Guidelines for Grazing Administration were also incorporated into the RMP. The Land Health Standards for Rangeland should be achieving or making significant progress toward achieving the standards. Guidelines direct the selection of grazing management practices and, where appropriate, livestock facilities to promote significant progress toward, or the attainment and maintenance of, the standards. The RHE completed for the El Capitan allotment determined that Standards 1 and 3 are being achieved, while Standard 2 does not apply.

1.3. Decision to be made

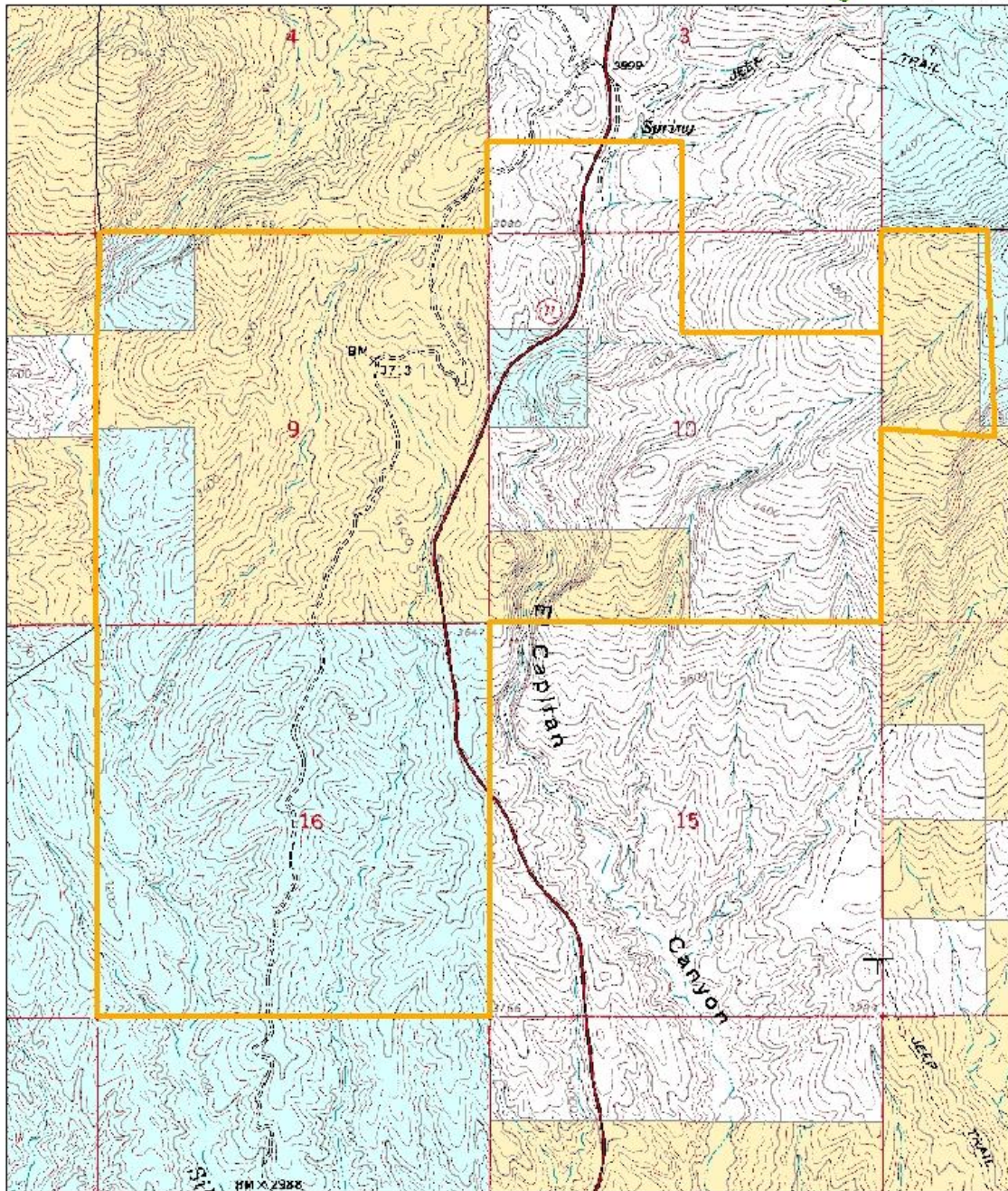
The Tucson Field Manager is the authorized officer responsible for the decisions regarding management of public lands within this allotment. Based on the results of the NEPA analysis, the authorized officer will determine whether the impacts of the Proposed Action described in this analysis are significant and would require preparation of an environmental impact statement (EIS). If the authorized officer determines that the impacts are not significant, this analysis will help to inform the decision to renew, renew with modifications, or not renew the lease. If renewed, management actions, mitigation measures, and monitoring requirements will be prescribed for the El Capitan allotment to ensure management objectives and Rangeland Health Standards continue to be achieved.

Figure 1 Land Ownership Map of the El Capitan allotment, Gila County, Arizona

El Capitan Grazing Allotment



United States Department of the Interior
Bureau of Land Management
Tucson Field Office
Land Status updated as of August, 2010



Legend



Allotment Boundary



Private Lands

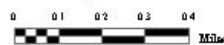


Bureau of Land Management (BLM)



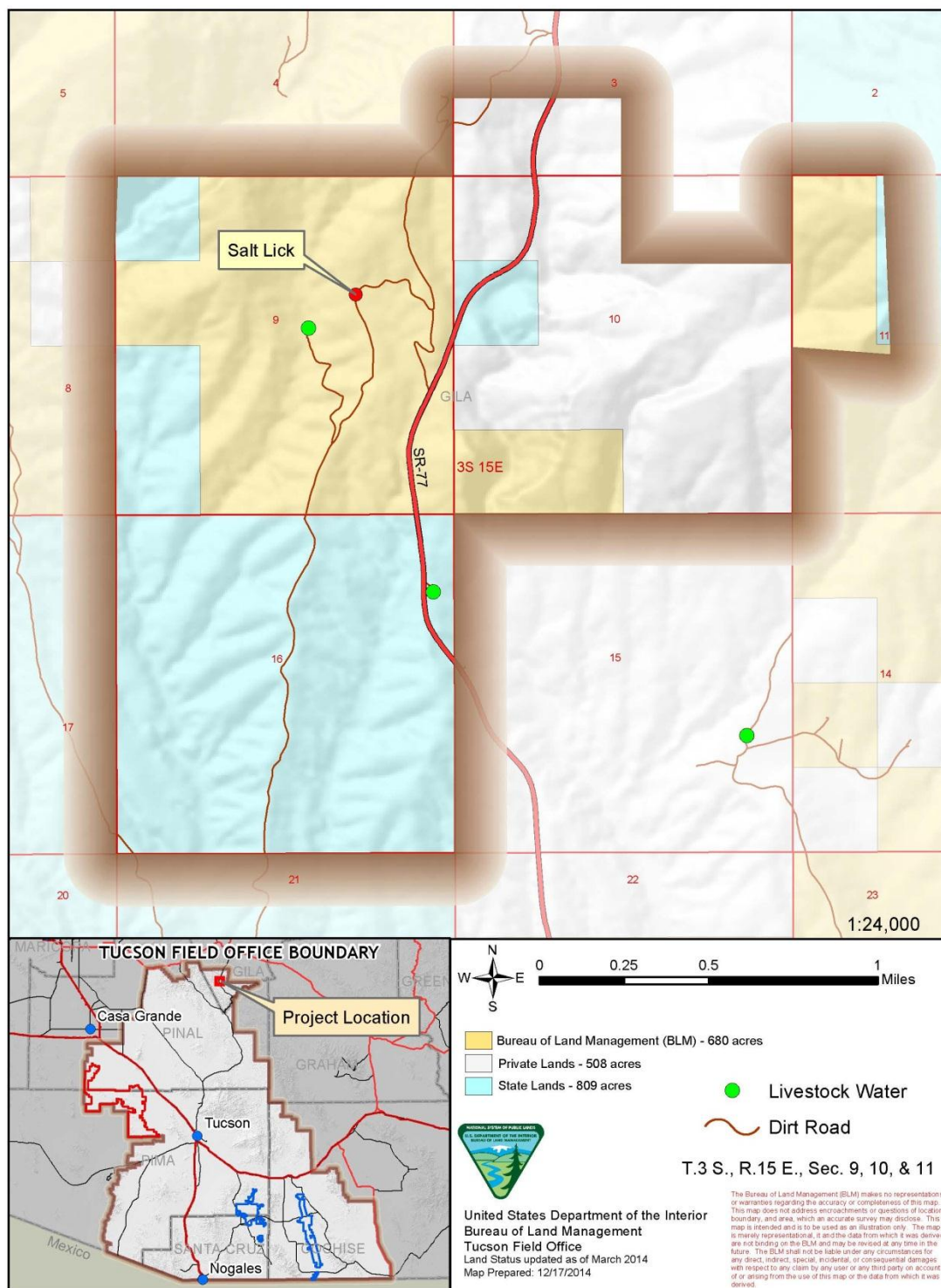
State Lands

1 = 21,447



Map created on May 15, 2013

Figure 2 Range Improvements on the El Capitan allotment



1.4. Conformance with Land Use Plan

The Proposed Action is in conformance with the 1992 Safford District RMP and Record of Decision. Rangeland management decisions in the Safford District RMP that pertain to the Proposed Action include:

- Decisions concerning the management of livestock on public lands in the Safford District RMP Planning Area have been developed through the *Upper Gila San Simon Grazing Environmental Impact Statement* (BLM 1978). Through the above authorizing document, BLM will continue to issue grazing permits and licenses, implement, monitor and modify allotment management plans and increase or decrease grazing authorizations as determined through the allotment evaluation process. As necessary, National Environmental Policy Act compliance documents will be prepared prior to any action being implemented. The grazing decisions are incorporated into the Safford District RMP by reference.

Management Actions

- Upland vegetation on public lands within the Safford District RMP Planning Area will be managed for watershed protection, livestock use, reduction of non-point source pollution, Threatened and Endangered species protection, priority wildlife habitat, firewood and other incidental human uses. Best management practices and vegetation manipulation will be used to achieve desired plant community management objectives. Treatments may include various mechanical, chemical and prescribed fire methods. Safford District RMP p. 24 & 45
- Ecological Site Inventories will be combined with the desired plant community concept to develop management objectives for activity plans as they are written or revised. Safford District RMP p. 45
- Public lands will be managed to preserve and enhance the occurrences of special status species and to achieve the eventual delisting of threatened and endangered species. Safford District RMP p. 45

Rangeland management decisions in the *Upper Gila San Simon Grazing Environmental Impact Statement* (UG-EIS) that pertain to the Proposed Action include:

Land Use Allocation

- Intensive management of grazing on 1,040,329 acres of public lands. UG-EIS Table 1-2, p. 1-7
- Custodial management of grazing on 38,161 acres of public lands. UG-EIS Table 1-2, p. 1-7
- Ephemeral management of grazing on 250,155 acres of public lands. UG-EIS Table 1-2, p. 1-7
- Deferment of grazing on 14,050 acres of public lands. UG-EIS Table 1-2, p. 1-7
- Unallocated for grazing: 4,014 acres of public lands. UG-EIS Table 1-2, p. 1-7

Objectives

- The general objective of the UG-EIS is to permit livestock to use the harvestable surplus of palatable vegetation—a renewable resource—and thereby produce a usable food product. The proposed livestock management program is based on the multiple use management concept, which provides for the demands of various resource uses and minimizes the conflicts among those uses or activities. Although the various uses of the rangeland resources can be compatible, competition among uses requires constraints and mitigating measures to realize multiple-use resource management goals. The Specific objectives for each grazing unit are shown in appendix C. UG-EIS p. 1-6
- With stocking rates in balance with the proposed grazing capacities, utilization of key forage species in the key areas would average about 40 percent over a period of years. At a given stocking rate during years of high forage production (e.g. above normal rainfall) utilization in the use pasture might be as low as 20 percent. During years of low forage production utilization could be as high as 60 percent. UG-EIS p. 1-9

Management Actions

- Cultural resource stipulations will be included in all grazing leases and permits. UG-EIS p. 4-2

1.5. Relationship to Statutes, Regulations or Other Plans

Grazing permit/lease renewals are provided for in 43 CFR 4100. The objectives of these regulations are “...to promote healthy, sustainable rangeland ecosystems; to accelerate restoration and improvement of public rangelands to properly functioning conditions; to promote the orderly use, improvement and development of the public lands; to establish efficient and effective administration of grazing of public rangelands; and to provide for the sustainability of the western livestock industry and communities that are dependent upon productive, healthy public rangelands” (43 CFR 4100.0-2).

The Proposed Action complies with 43 CFR 4100.0-8 which states, in part, “The authorized officer shall manage livestock grazing on public lands under the principle of multiple use and sustained yield, and in accordance with applicable land use plans.” The Proposed Action also complies with 43 CFR 4130.2(a) which states, in part, “Grazing permits or leases shall be issued to qualified applicants to authorize use on the public lands and other lands under the administration of the Bureau of Land Management that are designated as available for livestock grazing through land use plans”.

The Proposed Action is consistent with the Fundamentals of Rangeland Health (43 CFR 4180.1) and Rangeland Health Standards, which were developed through a collaborative process involving the Arizona Resource Advisory Council and the BLM State Standards and Guidelines team. The Secretary of the Interior approved the Standards and Guidelines in April 1997. These standards and guidelines address watersheds, ecological condition, water quality, and habitat for special status species. These resources are addressed later in this document.

In addition, the actions considered under this EA are designed to be consistent with all Federal, State, and local laws, regulations, and policies deemed relevant to the proposed undertaking, including (but not limited to) the following:

- Taylor Grazing Act of 1934
- Federal Land Policy and Management Act of 1976 (43 U.S.C. 1701 et seq.)
- Public Rangelands Improvement Act of 1978
- 43 CFR 4100 Grazing Administration - Exclusive of Alaska
- Arizona Water Quality Standards, Revised Statute Title 49, Chapter II
- Clean Water Act of 1972, as amended
- Clean Air Act of 1970, as amended
- Endangered Species Act of 1973, as amended
- Section 106 of the National Historic Preservation Act of 1966, as amended
- Native American Graves Protection and Repatriation Act of 1990 (25 U.S.C. 3001-3013; 104 Stat. 3048-3058)
- National Environmental Policy Act of 1969
- 43 CFR 8340- Off Road Vehicles
- Migratory Bird Treaty Act of 1917, and Executive Order 13186 – Responsibilities of Federal Agencies to Protect Migratory Birds

- Desert tortoise habitat management on the public lands, a range wide plan. 23pp. U.S. Department of the Interior, Bureau of Land Management. 1988

1.6. Scoping & Public Involvement

Internal scoping was conducted with BLM specialists.

1.7. Issues

For the purpose of BLM NEPA analysis, an “issue” is a point of disagreement, debate, or dispute with a Proposed Action based on some anticipated environmental effect. An issue is more than just a position statement, such as disagreement with grazing on public lands. An issue:

- has a cause and effect relationship with the Proposed Action or alternatives;
- is within the scope of the analysis;
- has not be decided by law, regulation, or previous decision; and
- is amenable to scientific analysis rather than conjecture.

1.7.1. Issues Identified for Analysis

For the purposes of this EA, the BLM analyzed issues if the analysis of the issue is necessary to make a reasoned choice between alternatives, or the issue is significant or may have potentially significant effects (BLM H-1790-1 2008). The Interdisciplinary Planning Team (IDT) carefully considered comments by BLM specialists, interested publics, the lessee, and affected agencies in order to identify issues relevant to issuing a 10-year grazing lease. The issues derived from internal scoping are as follows:

Issue 1: *How would continued livestock grazing affect existing access roads and trails on public lands in the project area?*

Issue 2: *What would be the effect of continued livestock grazing on upland vegetation cover?*

Issue 3: *What would be the effect of continued livestock grazing on cultural resources on the El Capitan allotment?*

1.7.2. Issues Considered, but eliminated from Detailed Analysis

Issue 1 – What would be the effect of continued livestock grazing on the spread of invasive and non-native weeds?

Monitoring results at Key Area 1 did not indicate a problem with the presence of invasive plant species. The RHE found that departure from the Ecological Site Description for invasive species was “slight to moderate” (see El Capitan Rangeland Health Evaluation), and native plant species are dominant on the allotment. Because grazing has existed on the allotment and on adjacent allotments for numerous years, and because no noxious weeds have been identified on the allotment, it is unlikely that continued grazing would alter current conditions with regard to the introduction and spread of noxious weeds.

Issue 2 – How would continued livestock grazing impact the Arizona hedgehog cactus (AHC) and its habitat?

The US Fish and Wildlife Service (USFWS) describes the habitat for AHC as follows: Plants are found on dacite or granite bedrock, open slopes, in narrow cracks between boulders, and in the understory of shrubs in the ecotone between Madrean Evergreen Woodland and Interior Chaparral. Elevation ranges from about 1,130-1,585 m (3,200-5,200 ft).

The BLM portion of the El Capitan allotment lies at elevations ranging from approximately 3,400-4,200 ft. which is within the known elevation range for the species. The USFWS project review tool, iPac, also identifies the project area as having potential for AHC. Additionally, the project area does contain elements of Madrean Woodland habitat, a habitat type identified by USFWS as associated with AHC.

Considering these factors, it is concluded that there is some potential for AHC to occur on the El Capitan allotment. The 1984 recovery plan for AHC indicates that herbivory on AHC seedlings may be an issue, but it is noted that the impacts of livestock herbivory on the species are unknown. Other listed threats to the species include, illegal collecting, habitat modification (mining is specifically mentioned), and freeze loss.

If AHC occurs on the allotment, the impacts of livestock grazing are likely to be minimal or non-existent because the stocking rate is low (5 cattle) and concentrated livestock use appears primarily limited to areas surrounding the one livestock water source, and 2-3 salt block stations. As such, it is very unlikely that livestock would encounter individual AHC plants, and impacts therefore would be minimal or non-existent. As such, it is recommended that the issue be withdrawn from detailed analysis.

Issue 3 – How would continued livestock grazing impact desert bighorn sheep habitat?

Big horn sheep use in the general vicinity of the El Capitan allotment is largely confined to the cliffs, canyons, and steep rocky slopes a mile and further away to the east in the Mescal Mountains. The El Capitan allotment does not contain the elements that make habitat suitable for Big Horn Sheep lambing, refuge, and foraging. Big Horn Sheep might occasionally cross the El Capitan allotment as they move from the Mescal Mountains to the Pasadera Mountains, but this use would be transient, infrequent and minimal such that grazing would have no impacts on the sustainability and health of the big horn sheep population in the area. Because the proposed action will not impact big horn sheep, the issue can be eliminated from detailed analysis.

Issue 4 – What would be the effect of continued livestock grazing on migratory bird habitat and food source?

A June 4, 2015 USFWS iPac analysis for the project area indicates that 29 bird species listed under the Migratory Bird Treaty Act could potentially occur in the project area. These 29 species consist of 9 species that could potentially use the area for wintering, 13 for breeding, and 7 could use the area year round. Livestock grazing potentially impacts bird habitat by removal of vegetation through herbivory, and the presence of livestock could destroy ground nests and disrupt activity patterns of birds. Because the authorization is for a small number of livestock (5 cattle), and because concentrated livestock use on the public land portion of the allotment is confined to areas immediately surrounding the one livestock water on the allotment and 2-3 salt block locations (perhaps 10 acres total), it is unlikely that livestock use would result in discernable impacts to any of the migratory birds listed, in that it is unlikely that forage resources, nesting and cover habitat would be reduced or altered such that changes in population numbers and population viability would occur.

Issue 5 – What would be the effect of continued livestock grazing on desert tortoise habitat and key forage species?

When the Sonoran Desert Tortoise (SDT) survey was conducted in November 2014, approximately 31% of the plant species encountered on the allotment were known desert tortoise food plants. None of these known SDT food plants showed signs of excessive mortality due to drought or excessive utilization due to livestock or other herbivory. Two areas on the allotment (including denning) showed evidence of SDT presence. The presence of SDT on the allotment, coupled with the presence of SDT food plant species in relatively healthy phonological states, indicates that the allotment appears to be meeting SDT desired resource conditions.

The effect on SDT habitat and key forage species of continued grazing at the current levels would be similar to what is currently occurring. Impacts of livestock grazing appear to be confined primarily to the areas surrounding the one allotment livestock water and 2-3 salt block locations. These concentrated impact areas total approximately 10 acres or less.

Issue 6 - What would be the effect of continued livestock grazing on the xero-riparian areas in the allotment?

Xero-riparian areas are areas immediately adjacent to desert washes. These areas do not meet the traditional definition of riparian, but they do exhibit denser vegetation growth and a greater diversity of plant species including some species that are facultative riparian species such as ash, willow and cottonwood. Xero-riparian vegetative assemblages occur because greater water availability exists in desert washes, seasonally as surface flow, and yearlong as influenced by subsurface hydrologic recharge.

The effect of continued grazing at the current levels would be similar to what is currently occurring. Impacts of livestock grazing appear to be confined primarily to the areas surrounding the one allotment livestock water and 2-3 salt block locations.

2. PROPOSED ACTION AND ALTERNATIVES

This chapter describes the alternatives to be analyzed in detail (Chapter 3). The IDT developed three alternatives –Proposed Action, No Action, and No Grazing –based on the recommendations presented in the El Capitan RHE, and to respond to issues raised in scoping. The alternatives are designed to meet the purpose and need for action, conform to existing land use plans, and satisfy the legal and regulatory requirements for rangeland management.

2.1. Features Common to All Alternatives

The following apply to each of the three alternatives below.

2.1.1. Arizona Standards for Rangeland Health

All the alternatives were designed to meet or make significant progress toward meeting the standards and following objectives, as described in the Rangeland Health Standards (Standard 2 –Riparian/Wetland, does not apply).

1. Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate, and landform (ecological site).
3. Productive and diverse upland and riparian-wetland plant communities of native species exist and are maintained.

2.1.2. Desired Plant Community Objectives

As part of the land health evaluation process, DPC objectives were established for important biological resources. DPC objectives address the desired resource conditions based on vegetation attributes, such as composition, structure, and cover that are desired within the allotment. These include establishing vegetative characteristics necessary for soil protection, providing forage and habitat for both livestock and wildlife.

Key Area 1 DPC Objectives Limestone Hills 12-16" precipitation zone ecological site

- Maintain perennial grass composition of $\geq 1\%$
- Maintain annual grass and forb composition of $\geq 5\%$
- Maintain a palatable shrub composition of $\geq 10\%$
- Maintain vegetative foliar cover at $\geq 20\%$
- Maintain plant species diversity such that at least 31% of plant species are known desert tortoise forage plants in healthy condition.
- Maintain current vegetative diversity in the xero-riparian area.

2.1.3. Adaptive Management Practices

Lessees are sent a letter requesting their proposed stocking levels for the coming billing year annually. They also can request a change in their authorization at any time such as to reduce their numbers due to drought or other factors. All grazing authorizations and changes to them must be approved by the Field Office manager. In drought years, BLM sends reminders to the lessees about reducing their herds, and if the drought is extended, BLM can require removal of livestock to protect the rangeland health of the allotment.

Actual use information will be submitted within 15 days of the end of the grazing year in accordance with 43 CFR 4130.3-2(d). Actual use reports will identify the amount of livestock use and period of use for each water source/pasture.

2.1.4. Cultural Resources

1. Any archaeological or historical artifacts or remains, or vertebrate fossils discovered during operations shall be left intact and undisturbed; all work in the area shall stop immediately and the Field Manager shall be notified immediately. Commencement of operations shall be allowed upon clearance by the Field Manager.
2. An additional cultural resource survey may be required in the event the project location is changed or additional surface disturbing operations are added to the project after the initial survey. Any such survey would have to be completed prior to commencement of operations.
3. If in connection with operations under this authorization, any human remains, funerary objects, sacred objects or objects of cultural patrimony as defined in the Native American Graves Protection and Repatriation Act (16 U.S.C. 4701-4702; 25 U.S.C. 3001) are discovered, the permittee shall stop operations in the immediate area of the discovery, protect the remains and objects, and immediately notify the Field Manager of the discovery. The permittee/lessee shall continue to protect the immediate area of the discovery until notified by the Field Manager that operations may resume.

2.1.5. Administrative Actions

Range improvement cooperative agreements need to be made for each improvement under this lease. This ensures the proper maintenance and ownership of these developments.

Any new drinking troughs would be installed with escape ramps that intercept the line of travel along the tank edge (Sherrets 1989).

The BLM in consultation, coordination and cooperation with the lessee, other agencies, and interested publics will continue to implement the following monitoring plan to measure the attainment of resource management objectives:

- Monitor Key Area cover, frequency, and composition every 10 years (Figure 4). (Interagency Technical Reference, TR1730-002 1999. Sampling Vegetation Attributes).
- The BLM in consultation, coordination and cooperation with the lessee will monitor utilization of upland key forage species over time on the allotment to ensure average utilization of key herbaceous and browse forage species does not exceed 40 percent, which is light-moderate use. Utilization goals and guidelines apply to each monitoring plot (key area). Utilization guidelines are intended to indicate a level of use to be achieved over the short and long term. Utilization data collected over a period of time is used along with analysis of frequency, cover, structure, actual use reports, precipitation, and desired plant community data to determine if changes in current management practices are necessary. Proper utilization levels are needed to maintain plant vigor and reproductive capabilities, provide plant litter for watershed health, and meet the habitat needs for wildlife species. Utilization measurements are used: (1) to identify use levels and patterns of use, (2) to help establish cause-and-effect interpretations of range trend data, and (3) if necessary, to aid in adjusting stocking rates when combined with other monitoring data.
- Actual Use/Utilization data would be collected over a period of years along with trend data to determine if changes in management practices are necessary to meet resource condition objectives.

2.1.6. Terms and Conditions

1. Any changes in grazing use must be applied for prior to the grazing period.

2. Each year billing notices are issued which specify, for the current year, the allotment(s), number and kind of livestock, period(s) of use, animal unit months of use, and the grazing fees due. These billing notices when paid, become a part of this grazing permit/lease.
3. Grazing fees are due upon issuance of a billing notice and must be paid in full prior to making any grazing use under this grazing permit/lease, unless otherwise provided for in the terms and conditions of this grazing permit/lease.
4. This grazing permit/lease is subject to the terms and conditions of an allotment management plan if such plan has been prepared. If an allotment management plan has not been prepared, it must be incorporated in this permit/lease when completed.
5. No grazing use can be authorized under this grazing permit/lease during any period of delinquency in the payment of amounts due in settlement for unauthorized grazing use.
6. Grazing use authorized under this grazing permit/lessee may be suspended, in whole or in part, for violation by the permittee/lessee of any of the provisions of the rules or regulations now or hereafter approved by the Secretary of the Interior.
7. This grazing permit/lease is subject to cancellation, in whole or in part, at any time because of:
 - a. Non-compliance by the permittee/lessee with rules and regulations now or hereafter approved by the Secretary of the Interior.
 - b. Loss of control by the permittee/lessee of all or a part of the property upon which it is based.
 - c. A transfer of grazing preference by the permittee/lessee to another party.
 - d. A decrease in the lands administered by the Bureau of Land Management within the allotment(s) described herein.
 - e. Repeated willful unauthorized grazing use.
8. This grazing permit/lease is subject to the provisions of executive Order NO. 11246 of September 24, 1965, as amended, which sets forth nondiscrimination clauses. A copy of this order may be obtained from the authorized officer.
9. The permittee/lessee must own or control and be responsible for the management of the livestock authorized to graze under this grazing permit/lease.
10. The authorized officer may require counting and/or additional or special marking or tagging of the livestock authorized to graze under this grazing permit/lease.
11. The permittee's/lessee's grazing case file is available for public inspection as required by the Freedom of Information Act.
12. Actual Use information, for each use area, will be submitted to the authorized officer within 15 days of completing grazing use as specified on the grazing lease and/or grazing billings in accordance with 43 CFR 4130.3-2(d).
13. In order to improve livestock distribution on the public lands, all salt blocks and/or mineral supplements will not be placed within a 1/4 mile of any riparian area, wet meadow, or watering facility (either permanent or temporary) unless stipulated through a written agreement or decision in accordance with 43 CFR 4130.3-2(c).
14. In Accordance with 43 CFR 4130.8-1(F): Failure to pay grazing bills within 15 days of the due date specified in the bill shall result in a late fee assessment of \$25.00 or 10 percent of the

grazing bill, whichever is greater, but not to exceed \$250.00. Payment made later than 15 days after the due date, shall include the appropriate late fee assessment. Failure to make payment within 30 days may be a violation of 43 CFR Sec. 4140.1(b)(1) and shall result in action by the authorized officer under 43 CFR Secs. 4150.1 and 4160.1-2.

15. Grazing in this allotment shall strictly adhere to the Arizona Standards for Rangeland Health and Guidelines for Grazing Administration, the Safford Upland Livestock Utilization and Drought Policies.
16. Pursuant to 43 CFR 10.4(b), the BLM Tucson Field Manager must be notified by telephone with written confirmation immediately upon the discovery of human remains, funerary objects, sacred objects, or objects of cultural patrimony (as defined in 43 CFR 10.2) on federal lands. Pursuant to 43 CFR 10.4(c), any ongoing activities connected with such discovery must be stopped immediately and a reasonable effort to protect the discovered remains or objects must be made. Protection of the immediate area of the discovery shall continue until notified by the authorized officer that operations may resume.

2.2. Alternative A: Proposed Action

The Proposed Action consists of the renewal of the grazing lease for the El Capitan allotment for a period of 10 years with the following Terms and Conditions:

- For a term of 10 years for a Permitted Use of 60 AUMs.
- Standard conditions (listed above).

Maximum allowable use levels will be as follows:

- 40% of the current year's growth on key forage species (UG-EIS p. 1-9).

Grazing Plan: Yearlong

Table 1 El Capitan Allotment (#04504) Mandatory Terms and Conditions

Allotment	Livestock Number	Kind	Grazing Period	AUMs	%Public Land
El Capitan	5	Cattle	03/01 – 02/28	60	100

The BLM public lands in the El Capitan allotment are surrounded by private land and Arizona State Trust Land (State Land). There is no fencing between BLM, private, or State Land.

2.3. Alternative B: No Action

A no action alternative is developed for two reasons. First, the no action alternative represents a viable and feasible choice in the range of management alternatives. Second, because a no action alternative represents the continuation of current management actions, it provides a benchmark of existing impacts continued into the future against which to compare the impacts of the other proposed management alternatives.

Under the No Action alternative, the El Capitan grazing lease would be renewed for a period of 10 years with the same terms and conditions as the current lease (Table 1).

2.4. Alternative C: No Grazing

This alternative was developed to address unresolved conflicts concerning alternative uses of available resources, in this case, alternative uses of forage (40 CFR 1501.2(c)). Under the No Grazing alternative, the BLM would not authorize grazing on the El Capitan allotment for a ten-year term and all Animal Unit Months (AUMs) for active preference would not be available for livestock grazing on public lands (i.e., livestock grazing would be deferred for the ten-year lease period). No new range improvement projects would be constructed and no modifications would be made to existing projects.

2.5. Alternatives Considered but Eliminated from Detailed Study

Alternatives may be dismissed from detailed analysis under the following conditions:

- The alternative is ineffective and would not respond to the Purpose and Need
- It's technically or economically infeasible
- It's inconsistent with the land use plan
- Implementation is remote or speculative
- It's substantially similar to another alternative that is analyzed
- It would have substantially similar effects as an alternative that is being analyzed.

Reduced Grazing Alternative

The purpose of the alternative was to consider whether reducing the livestock stocking rate on the allotment presented a viable means of meeting the purpose and need for this action. A reduced grazing alternative was not analyzed in detail because the current alternatives sufficiently illustrate the full range of expected impacts since the land health standards are currently being met. The carrying capacity analysis demonstrates that utilization is within the desired range under current stocking rates. The IDT determined that the alternative would have substantially similar effects as an alternative (Proposed Action and No Action) that is being analyzed in detail in this EA. Therefore, the alternative is removed from detailed analysis.

3. AFFECTED ENVIRONMENT AND ENVIRONMENTAL CONSEQUENCES

This section describes the baseline condition (i.e., affected environment) and expected impacts of the project alternatives. Resources that have been identified by the BLM Tucson Field Office interdisciplinary NEPA team as present and potentially affected are discussed further below. Those resources that are not affected (as identified by the BLM interdisciplinary team), and will not be discussed in detail include: Air Quality, Environmental Justice, Prime and Unique Farmland, Floodplains, Native American Religious Concerns, Hazardous or Solid Waste, Water Quality - Drinking or Ground, Wetlands/ Riparian Zones, Areas of Critical Environmental Concern, Wild and Scenic Rivers, Wilderness Areas, Invasive and Non Native Weeds, National Energy Policy, Recreation, Lands/ Realty, Mineral Resources, and Water Rights.

3.1. Issue 1: How would continued livestock grazing affect existing access roads and trails on public lands in the project area?

3.1.1. Affected Environment

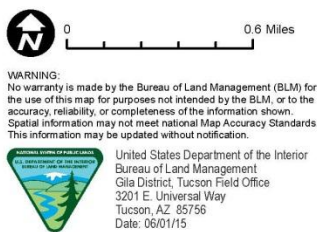
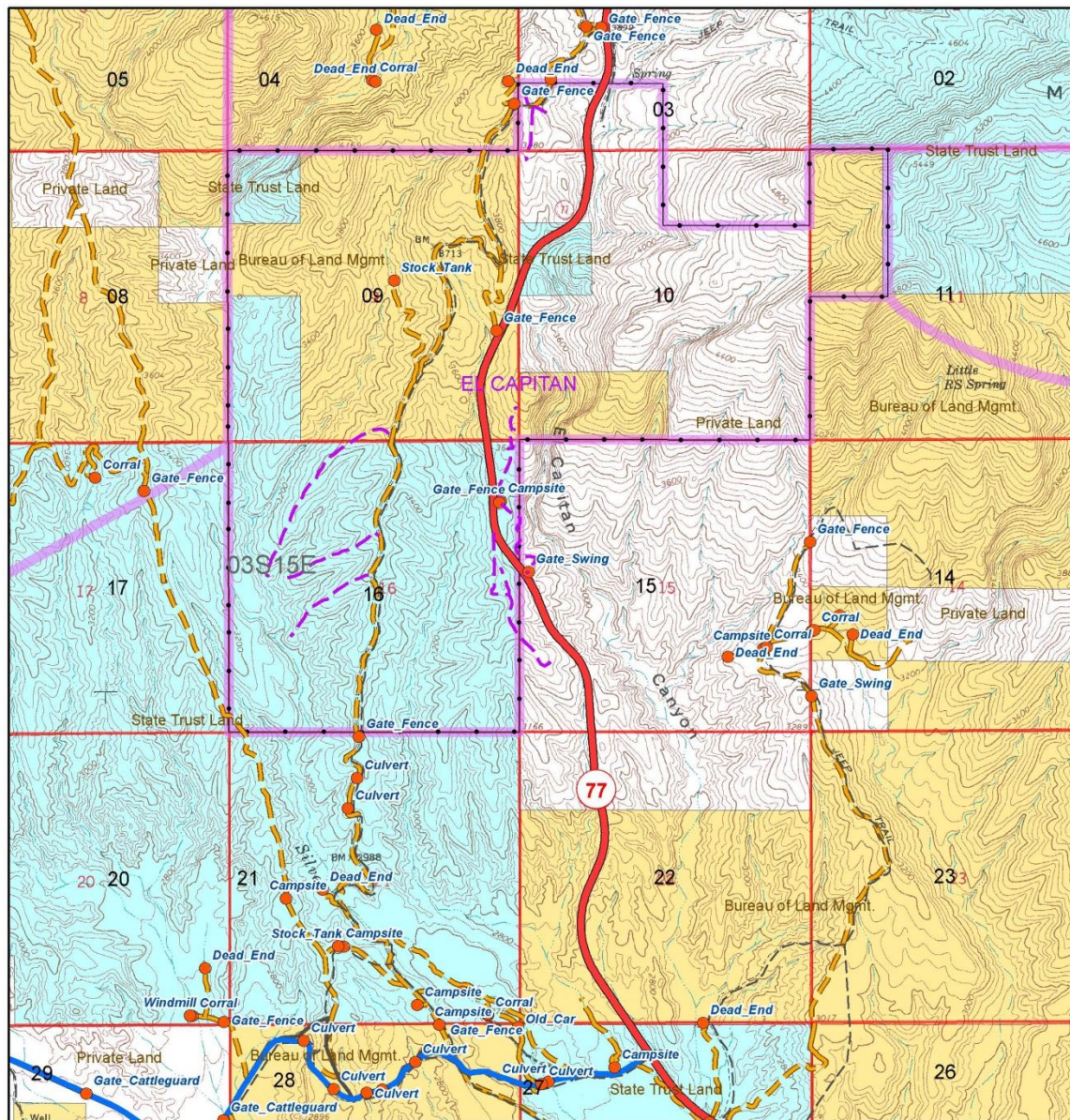
An interagency physical access route inventory to identify existing motorized vehicle access to public lands in the project area was completed in 2003¹. The route inventory identified several existing primitive roads which were found to be providing motor vehicle access to public lands from SR 77, and from the Gila County maintained Dripping Springs Road. The existing roads are primitive and in poor condition, and have not been maintained in many years.

The routes have drainage problems that are causing erosion and affecting the usability of the routes. The route inventory also identified several routes that were in reclaiming condition, with natural revegetation in the roadway and encroaching along the sides, and have not been used for motor vehicle access purposes. Sections of reclaiming routes intercept and concentrate surface runoff, and have ditch and gully erosion problems.

Under current OHV designations made in the Safford District RMP in accordance with 43CFR8342, all motorized vehicle use is limited to existing roads and trails. The existing motorized access routes and reclaiming routes are shown on Map 3.1- Existing Access and Transportation Routes. Under current public land regulations, the existing motor vehicle access routes may be used by the general public, the grazing lessee, and other authorized land users. No maintenance may be performed on the existing routes without specific authorization by the BLM.

¹ Arizona Motorized Vehicle Access Route Inventory, United States Department of Interior, Bureau of Land Management, Arizona 2003.

Figure 3 Routes and Access Points in the El Capitan allotment



- Legend:**
- AZ BLM Existing Route Inventory
 - AZ BLM Statewide Route Inventory Points
 - Dripping Springs Rd (Gila County Maintained)
 - State or Federal Highways
 - Local Highways and Roads (ADOT)
 - Primitive Roads or Trails (ALRIS)
 - Reclaiming or Other Route
- General Land Ownership**
- Bureau of Land Management
 - State Trust Lands
 - Private
- NOTE: Not all surface management classes may appear on the map.

United States Department of the Interior
BUREAU OF LAND MANAGEMENT
Tucson Field Office, Arizona

Map 3.1 - Existing Access and Transportation Routes
EL CAPITAN GRAZING ALLOTMENT
(BLM # 4504)

3.1.2. Impacts from the Proposed Action

Direct and Indirect Impacts

The existing motorized vehicle access routes may be used in their present condition to gain access to public lands for the use of the range, and for the maintenance and operation of existing range improvements. No maintenance is proposed or authorized under this action, and the condition of the existing motorized access routes would remain essentially the same. Motorized routes would continue to deteriorate due to drainage and erosions problems. The reclaiming routes would continue to revegetate by natural processes, with continued drainage problems and associated soil erosion. Soil erosion caused by poor drainage of this roadway is most likely causing sedimentation somewhere downstream of the allotment.

Cumulative Impacts

Existing motorized access routes would continue to be used for access. Some routes or sections may become impassable due to erosion caused by drainage issues, and lack of maintenance, potentially leading to loss of access, and/or resource damage on public lands adjacent to the travelway as users create bypasses around impassable sections. The cumulative impacts of erosion over time caused by drainage issues on these routes could have negative implications for downstream sedimentation, water quality and watershed conditions.

Mitigation Measures and Residual Impacts

Administrative Action:

A Road Maintenance Agreement to provide for maintenance of existing motor vehicle access routes to appropriate standards would need to be entered into between the BLM and the grazing lease holder. Roads that would be maintained, and maintenance standards and procedures would be identified under the agreement to correct current deficiencies (primarily drainage and erosion control). Reclaiming routes would be identified for erosion control and stabilization to prevent continuing soil erosion along these routes.

As an alternative to a road maintenance agreement, some or all of the existing motor vehicle access routes could be identified as range improvements, and maintenance would be authorized according to standards, guidelines and procedures identified in advance. Reclaiming routes could be identified as trails for non-motorized access or trailing livestock, provided natural reclamation and revegetation processes are allowed to continue, and drainage deficiencies are corrected, and soil erosion is stabilized.

3.1.3. Impacts from the No Action Alternative

Direct and Indirect Impacts

The existing motorized vehicle access routes may be used in their present condition to gain access to public lands for the use of the range, and for the maintenance and operation of existing range improvements authorized under the lease. No road or trail maintenance is proposed or authorized under this action. The condition of existing routes will remain essentially the same, with motorized routes continuing to deteriorate due to drainage and erosions problems, and the condition of reclaiming routes would continue to revegetate by natural processes, with continued drainage problems and erosion. Soil erosion caused by poor drainage of this roadway is most likely causing sedimentation somewhere downstream of the allotment.

Cumulative Impacts

Existing motorized access routes would continue to be used for access. Some routes or sections may become impassable due to erosion caused by drainage issues, and lack of maintenance, potentially leading to loss of access, and/or resource damage on public lands adjacent to the travel way as users

creating bypasses around impassable sections. The cumulative impacts of erosion over time caused by drainage issues on these routes could have negative implications for downstream sedimentation, water quality and watershed conditions.

3.1.4. Impacts from the No Grazing Alternative

Direct and Indirect Impacts

Under the No Grazing Alternative, the existing motorized vehicle access routes would no longer be needed for access purposes related to grazing operations (use of the range, maintenance and operation of existing range improvements). Access would be needed for cleanup and restoration activities related to removal and disposal of range improvements that would no longer be necessary. The existing vehicle access routes would continue to receive dispersed public recreational use. The existing routes would continue to deteriorate due to drainage and erosion problems, and sections may become impassable, potentially leading to loss of vehicle access, requiring high clearance 4WD vehicles or leading to damage to land adjacent to the existing roadway as users create bypasses around washed out road sections. The reclaiming routes would continue to revegetate by natural processes, with continuing drainage problems and associated soil erosion. Soil erosion caused by poor drainage of this roadway is most likely causing sedimentation somewhere downstream of the allotment.

Cumulative Impacts

The existing vehicle access routes would remain available for access to public lands. Roadways would continue in their present condition and to deteriorate due to drainage and erosion problems. The reclaiming routes would continue to revegetate by natural processes, with continuing drainage problems and associated soil erosion. The cumulative impacts of erosion over time caused by drainage issues on these routes could have negative implications for downstream sedimentation, water quality and watershed conditions.

Mitigation Measures and Residual Impacts

Road maintenance and spot repairs could correct drainage problems and stabilize soil erosion on the existing roads, while accommodating vehicle access and use. Drainage and erosion control on the reclaiming roadways could restore natural drainage patterns and stabilize existing erosion on the reclaiming roadways.

3.2. Issue 2: What would be the effect of continued livestock grazing on upland vegetation cover?

3.2.1. Affected Environment

The El Capitan allotment is located approximately 17 miles South of Globe, Arizona. SR 77 traverses the allotment from North to South. Elevation within the allotment ranges from around 3,000 feet to over 5,000 feet. Topography is rough with steep mountainous terrain. The BLM portion of the allotment is located at T. 3 S., R. 15 E.

The Natural Resource Conservation Service (NRCS) characterizes land resource regions by particular patterns of soils, climate, water resources and land uses. These large regions are then grouped into Major Land Resource Areas (MLRAs). MLRAs are then broken down further into ecological sites, which are associated units of soil and vegetation with quantifiable characteristics. The BLM portion of the El Capitan allotment encompasses several Ecological Sites. See Table 2 below.

Table 2

<u>Ecological Site</u>	<u>MLRA</u>	<u>Precipitation Zone</u>	<u>Last Updated</u>
Limy Slopes	40-1	10-13"	2008
Limestone Hills	38-1	12-16"	2009
Volcanic Hills – Clayey	38-1	12-16"	2012
Limestone Hills	38-1	16-20"	2011

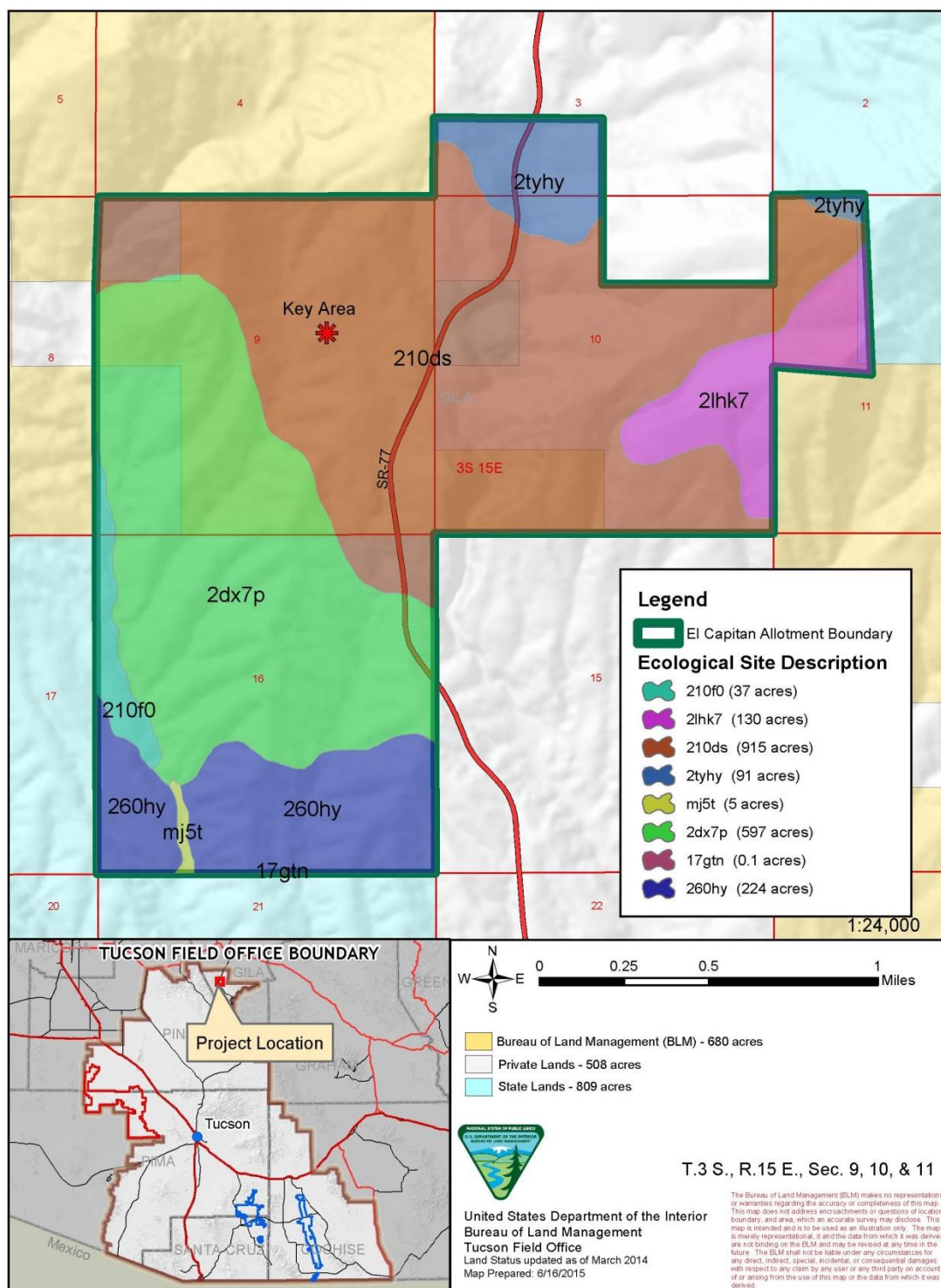
The plant communities found on an ecological site are naturally variable. Existing communities are the result of the combination of historical and recent uses and natural events. Composition and production will vary with yearly conditions, location, aspect, and natural variability of the soils. The Historical Climax Plant Community represents the natural potential plant communities found on relatively undisturbed sites.

The current plant community on the El Capitan allotment, as seen on the Rangeland Health Evaluation March 5, 2013, includes: jojoba (*Simmondsia chinensis*), palo verde (*Cercidium microphyllum*), yucca (*Yucca sp.*), prickly pear (*Opuntia*), snake weed (*Gutierrezia sarothrae*), burro weed (*Ambrosia dumosa*), brittle bush (*Encelia farinosa*), white thorn (*Acacia constricta*), Catclaw mimosa (*Mimosa aculeatecarpa*), velvet mesquite (*Prosopis velutina*), fairy duster (*Calliandra eriophylla*), juniper (*Juniperus sp.*), ocotillo (*Fouquieria splendens*), desert christmas cactus (*Opuntia leptocaulis*), staghorn cholla (*Opuntia versicolor*), saquaro (*Carnegiea gigantea*), paper flower, blue dick (*Brodiaea Dichelostemma*), trailing four o'clock (*Allionia incarnate*), spidergrass (*Aristida ternipes*), bush muhly (*Muhlenbergia porteri*), slim tridens (*Tridens muticus*), fluffgrass (*Erioneuron pulchellum*), three awn species.

Desired Plant Community

DPC objectives detail a site-specific plant community, which, when obtained, will assure rangeland health, State water quality standards, and habitat for endangered, threatened and sensitive species. Because DPC objectives are site-specific, Key Areas located on similar stratum may have difference DPC objectives. This is due to differences in slope, elevation, aspect and rainfall factors, as well as other site potential limiting factors such as prior disturbance, rock outcroppings, or heavy gravel cover. The recommended palatable shrub and grass compositions will provide for adequate wildlife forage on the site for species such as Sonoran desert tortoise, mule deer, quail, and other non-game wildlife species. The foliar cover and bare ground cover class objectives will provide thermal and hiding cover for wildlife species and will prevent accelerated erosion on the sites.

Figure 4 El Capitan allotment Key Area and Ecological Sites



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A Rangeland Health Evaluation was completed on the allotment on September 3, 2004 and on March 5, 2013. See Table 3 below.

Table 3

A Rangeland Health Evaluation was conducted September 3, 2004

Rangeland Health Attribute	Limey Slopes Ecological Site				
	Departure From Ecological Site Description				
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
Soil/Site Stability	0	0	1	3	6
Hydrologic Function	0	0	2	2	7
Biotic Integrity	0	0	3	4	1

Per *Technical Reference 1734-6, 2000*, overall ratings Soil/Site Stability are an addition of the number of observations for indicators 1-9 and 11. Overall ratings for Hydrologic Function are an addition of the number of observations for indicators 1-5, 7-11, and 14. Overall ratings for Biotic Integrity are an addition of the number of observations for indicators 9, and 11-17.

A Rangeland Health Evaluation was conducted March 5, 2013

Rangeland Health Attribute	Limey Slopes Ecological Site				
	Departure From Ecological Site Description				
	Extreme	Moderate to Extreme	Moderate	Slight to Moderate	None to Slight
Soil/Site Stability	0	0	0	1	9
Hydrologic Function	0	0	0	2	8
Biotic Integrity	0	2	0	2	5

Per *Technical Reference 1734-6, 2005*, overall ratings Soil/Site Stability are an addition of the number of observations for indicators 1-9 and 11. Overall ratings for Hydrologic Function are an addition of the number of observations for indicators 1-5, 8-11, and 14. Overall ratings for Biotic Integrity are an addition of the number of observations for indicators 8-9, and 11-17.

The ecological sites analyzed in the 2004 and 2013 evaluations were Limy Slopes sites. The 2013 evaluation shows an overall upward trend for Standards 1 and 3.

Vegetation monitoring was conducted by the UA Cooperative Extension and BLM range staff on March 17, 2010 and March 12, 2013. See Tables 4 and 5 below.

Table 4

Percent cover compared from March 2010 to March 2013.

Key-1, El Capitan Allotment, Tucson Field Office, BLM

	2010	2013
Perennial grasses		
Bush Muhly	0	T
Perennial threeawn	T	T
Perennial forbs		
Bluedicks	T	0
Paper flower	0	1
Trees and shrubs		
Agave	1	T
Banana yucca	11	10
Burroweed	1	T
Catclaw acacia	8	T
Cholla	3	1
False mesquite	1	0
Hedgehog cactus	T	0
Jojoba	42	21
Prickly Pear	10	2
Snakeweed	1	1
Turpentine bush	T	0
Whitethorn acacia	1	0
Wolfberry	1	T

Table 5

Percent composition compared from March 2010 to March 2013.

Key-1, El Capitan Allotment, Tucson Field Office, BLM

	2010	2013
Perennial grasses		
Bush Muhly	0	1
Perennial threeawn	T	T
Perennial forbs		
Bluedicks	1	0
Paper flower	0	2
Trees and shrubs		
Agave	2	T
Banana yucca	24	27
Burroweed	T	T
Catclaw acacia	8	T
Cholla	3	1
False mesquite	1	0
Hedgehog cactus	T	0
Jojoba	42	55
Prickly Pear	10	5
Mesquite	0	4
Snakeweed	1	2
Turpentine bush	T	0
Whitethorn acacia	1	0
Wolfberry	1	1

Land Health standards 1 and 3 are currently being met for the allotment with its current level of use of 60 AUM's. There are no riparian areas present on the allotment and therefore standard 2 does not apply. Xero-riparian washes were addressed under Standard 3. The complete Rangeland Health Evaluation for the El Capitan allotment is available from the Tucson Field Office. The renewal of this 10-year lease will continue the current levels of livestock use.

3.2.2. Impacts from the Proposed Action alternative

Direct and Indirect Impacts

Under the Proposed Action, direct impact to vegetation would occur through livestock grazing. The proposed renewal of the grazing lease with Terms and Conditions allows the grazing program to continue on the El Capitan allotment in concert with the multiple use and sustainability mandates of the BLM. Standards are being met for upland health and the desired plant community therefore upland vegetation is able to grow, set seed, build up carbohydrate stores, build root systems, become established, and spread unrestricted when weather conditions permit.

Cumulative Impacts

The Proposed Action would utilize some upland vegetation associated with grazing. Historic grazing, past mining activities, and current recreational activities have all contributed impacts to the upland vegetation current condition on the El Capitan allotment. Adding the effects of the proposed action to the effects of the past and present actions are not expected to change current conditions. This utilization of vegetation would not compromise wildlife habitat or plant community connectivity or result in the loss of any species or populations. Cumulatively these impacts aren't expected to result in the loss of habitat function in any of the vegetative communities within the El Capitan allotment area.

3.2.3. Impacts from the No Action alternative

Direct and Indirect Impacts

The continuation of the existing terms and conditions under the current lease would have the same affects as the proposed action.

Cumulative Impacts

Cumulative impacts to vegetation under the no action alternative would be the same as the proposed action.

3.2.4. Impacts from the No Grazing Alternative

Direct and Indirect Impacts

Elimination of grazing would most likely result in utilization levels around 5-10% from wildlife. This would allow upland vegetation to grow, set seed, build up carbohydrate stores, build root systems, become established, and spread unrestricted when weather conditions permit. Currently there are no fences that separate BLM lands from State Land and private land. Approximately 4 miles of new fences along BLM boundaries to keep out trespassing livestock would require some pruning and removal of vegetation.

Cumulative Impacts

Under the No Grazing Alternative there is no anticipated impact to upland vegetation.

3.3. Issue 3: What would be the effect of continued livestock grazing on cultural resources on the El Capitan allotment?

3.3.1. Affected Environment

Allotment case files, AMP files, range project files, and water-source inventory files, were reviewed to determine areas of livestock congregation. Cultural resource site records/files were also reviewed to determine if archaeological sites were previously recorded in and around areas of livestock congregation. After review, it was determined that no historic properties were identified in areas of livestock congregation, therefore no mitigation is recommended as a BLM responsibility or as a term of condition of the permit, to protect cultural resource values on the allotment.

3.3.2. Environmental Impacts from the Proposed Action alternative

Direct and Indirect Impacts

The continuation of existing terms and conditions under the current lease would likely have few or limited impacts to cultural resources if guidelines for cultural resource compliance (referenced in "Cultural Resource Handbook 8120 for Grazing/Lease Renewals") are followed. Impacts can occur to cultural resource properties from livestock grazing especially in areas where water developments occur. For this allotment, no cultural resource modifications have been recommended under the proposed action. Any subsequent NEPA related project activities such as construction of range improvements will require a

Class III (Section 106 NHPA) cultural resource survey prior to project implementation. When historic properties are identified as being impacted by livestock grazing, if the characteristics that make these properties eligible for the NRHP are being compromised, mitigation measures will be outlined in the NEPA document for the allotment involved.

Cumulative Impacts

Any future proposed range improvement projects, if they include ground disturbing activities will be surveyed at Class III level following the requirements specified in Section 106 NHPA.

3.3.3. Impacts from the No Action alternative

Direct and Indirect Impacts

The continuation of the existing terms and conditions under the current lease (no cultural resource modifications have been made to the proposed action to renew the grazing lease), would likely be expected to remain as they are; highest risk areas to cultural resources are around livestock waters, and the three water sources (springs/seeps). If cultural resource sites are being impacted, mitigation measures will be outlined in the NEPA document for the allotment involved.

Cumulative Impacts

Any future proposed range improvement projects, if they include ground disturbing activities will be surveyed at Class III level following the requirements specified in Section 106 NHPA.

3.3.4. Impacts from the No Grazing alternative

Direct and Indirect Impacts

Livestock grazing would not be continued so would not affect cultural resources.

Cumulative Impacts

Livestock grazing would not be continued so it would not affect cultural resources.

4. SUPPORTING INFORMATION

4.1. List of Preparers

- Kristen Duarte, Rangeland Management Specialist. Grazing and vegetation
- Keith Hughes, Natural Resource Specialist. Wildlife and Threatened and Endangered Species
- Francisco J. Mendoza, Outdoor Recreation Planner. Access, transportation and travel management, recreation resources
- Ben Lomeli, Hydrologist. Water Resources
- Amy Sobiech, Archaeologist
- Amy Markstein, NEPA Planner

4.2. References

Arizona Interagency Motorized Access Route Inventory, USDI/BLM, Arizona 2003.

Technical Reference 1734-6. 2000. Interpreting Indicators of Rangeland Health. Natural Science and Technology Center, Bureau of Land Management. Denver, Colorado.

Technical Reference 1734-6. 2005. Interpreting Indicators of Rangeland Health. Natural Science and Technology Center, Bureau of Land Management. Denver, Colorado.

APPENDIX A. ARIZONA'S STANDARDS FOR RANGELAND HEALTH AND GUIDELINES FOR GRAZING ADMINISTRATION

INTRODUCTION

The Department of the Interior's final rule for Grazing Administration, issued on February 22, 1995, and effective August 21, 1995, requires that Bureau of Land Management (BLM) State Directors develop State or regional standards and guidelines for grazing administration in consultation with BLM Resource Advisory Councils (RAC), other agencies and the public. The final rule provides that fallback standards and guidelines be implemented, if State standards and guidelines are not developed by February 12, 1997. Arizona Standards and Guidelines and the final rule apply to grazing administration on public lands as indicated by the following quotation from the Federal Register, Volume 60, Number 35, page 9955.

"The fundamentals of rangeland health, guiding principles for standards and the fallback standards address ecological components that are affected by all uses of public rangelands, not just livestock grazing. However, the scope of this final rule, and therefore the fundamentals of rangeland health of §4180.1, and the standards and guidelines to be made effective under §4180.2, are limited to grazing administration."

Although the process of developing standards and guidelines applies to grazing administration, present rangeland health is the result of the interaction of many factors in addition to grazing by livestock. Other contributing factors may include, but are not limited to, past land uses, land use restrictions, recreation, wildlife, rights-of-way, wild horses and burros, mining, fire, weather, and insects and disease.

With the commitment of BLM to ecosystem and interdisciplinary resource management, the standards for rangeland health as developed in this current process will be incorporated into management goals and objectives. The standards and guidelines for rangeland health for grazing administration, however, are not the only considerations in resolving resource issues.

The following quotations from the Federal Register, Vol. 60, No. 35, page 9956, February 22, 1995, describe the purpose of standards and guidelines and their implementation:

"The guiding principles for standards and guidelines require that State or regional standards and guidelines address the basic components of healthy rangelands. The Department believes that by implementing grazing-related actions that are consistent with the fundamentals of §4180.1 and the guiding principles of §4180.2, the long-term health of public rangelands can be ensured.

"Standards and guidelines will be implemented through terms and conditions of grazing permits, leases, and other authorizations, grazing-related portions of activity plans (including Allotment Management Plans), and through range improvement-related activities.

"The Department anticipates that in most cases the standards and guidelines themselves will not be terms and conditions of various authorizations but that the terms and conditions will reflect the standards and guidelines.

"The Department intends that assessments and corrective actions will be undertaken in priority order as determined by BLM.

"The Department will use a variety of data including monitoring records, assessments, and knowledge of the locale to assist in making the "significant progress" determination. It is anticipated that in many cases it will take numerous grazing seasons to determine direction and magnitude of trend. However, actions will be taken to establish significant progress toward conformance as soon as sufficient data are available to make informed changes in grazing practices."

FUNDAMENTALS AND DEFINITION OF RANGELAND HEALTH

The Grazing Administration Regulations, at §4180.1 (43 Code of Federal Regulation [CFR] 4180.1), Federal Register Vol. 60, No. 35, pg. 9970, direct that the authorized officer ensures that the following conditions of rangeland health exist:

(a) Watersheds are in, or are making significant progress toward, properly functioning physical condition, including their upland, riparian-wetland, and aquatic components; soil and plant conditions support infiltration, soil moisture storage, and the release of water that are in balance with climate and landform and maintain or improve water quality, water quantity, and timing and duration of flow.

(b) Ecological processes, including the hydrologic cycle, nutrient cycle, and energy flow, are maintained, or there is significant progress toward their attainment, in order to support healthy biotic populations and communities.

(c) Water quality complies with State water quality standards and achieves, or is making significant progress toward achieving, established BLM management objectives such as meeting wildlife needs.

(d) Habitats are, or are making significant progress toward being, restored or maintained for Federal threatened and endangered species, Federal Proposed, Category 1 and 2 Federal candidate and other special status species.

These fundamentals focus on sustaining productivity of a rangeland rather than its uses. Emphasizing the physical and biological functioning of ecosystems to determine rangeland health is consistent with the definition of rangeland health as proposed by the Committee on Rangeland Classification, Board of Agriculture, National Research Council (Rangeland Health, 1994, pg. 4 and 5). This Committee defined Rangeland Health ". . .as the degree to which the integrity of the soil and the ecological processes of rangeland ecosystems are sustained." This committee emphasized ". . .the degree of integrity of the soil and ecological processes that are most important in sustaining the capacity of rangelands to satisfy values and produce commodities." The Committee also recommended that "The determination of whether a rangeland is healthy, at risk, or unhealthy should be based on the evaluation of three criteria: degree of soil stability and watershed function, integrity of nutrient cycles and energy flow, and presence of functioning mechanisms" (Rangeland Health, 1994, pg. 97-98).

Standards describe conditions necessary to encourage proper functioning of ecological processes on specific ecological sites. An ecological site is the logical and practical ecosystem unit upon which to base an interpretation of rangeland health. Ecological site is defined as:

" . . . a kind of land with specific physical characteristics which differs from other kinds of land in its ability to produce distinctive kinds and amounts of vegetation and in its response to management" (Journal of Range Management, 48:279, 1995). Ecological sites result from the interaction of climate, soils, and landform (slope, topographic position). The importance of this concept is that the "health" of different kinds of rangeland must be judged by standards specific to the potential of the ecological site. Acceptable erosion rates, water quality, productivity of plants and animals, and other features are different on each ecological site.

Since there is wide variation of ecological sites in Arizona, standards and guidelines covering these sites must be general. To make standards and guidelines too specific would reduce the ability of BLM and interested publics to select specific objectives, monitoring strategies, and grazing permit terms and conditions appropriate to specific land forms.

Ecological sites have the potential to support several different plant communities. Existing communities are the result of the combination of historical and recent uses and natural events. Management actions may be used to modify plant communities on a site. The desired plant community for a site is defined as follows: "Of the several plant communities that may occupy a site, the one that has been identified through a management plan to best meet the plan's objectives for the site. It must protect the site as a minimum." (Journal of Range Management, 48:279, 1995.)

Fundamentals (a) and (b) define physical and biological components of rangeland health and are consistent with the definition of rangeland health as defined by the Committee on Rangeland Classification, Board on Agriculture, National Research Council, as discussed in the paragraph above. These fundamentals provide the basis for sustainable rangelands.

Fundamentals (c) and (d) emphasize compliance with existing laws and regulation and, therefore, define social and political components of rangeland health. Compliance with Fundamentals (c) and (d) is accomplished by managing to attain a specific plant community and associated wildlife species present on ecological sites. These desired plant communities are determined in the BLM planning process, or, where the desired plant community is not identified, a community may be selected that will meet the conditions of Fundamentals (a) and (b) and also adhere to laws and regulations. Arizona Standard 3 is written to comply with Fundamentals (c) and (d) and provide a logical combination of Standards and Guidelines for planning and management purposes.

STANDARD AND GUIDELINE DEFINITIONS

Standards are goals for the desired condition of the biological and physical components and characteristics of rangelands. Standards:

- (1) are measurable and attainable; and
- (2) comply with various Federal and State statutes, policies, and directives applicable to BLM Rangelands.

Guidelines are management approaches, methods, and practices that are intended to achieve a standard. Guidelines:

- (1) typically identify and prescribe methods of influencing or controlling specific public land uses;
- (2) are developed and applied consistent with the desired condition and within site capability; and
- (3) may be adjusted over time.

IMPLEMENTING STANDARDS AND GUIDELINES

The authorized officer will review existing permitted livestock use, allotment management plans, or other activity plans which identify terms and conditions for management on public land. Existing management practices and levels of use on grazing allotments will be reviewed and evaluated on a priority basis to determine if they meet, or are making significant progress toward meeting, the standards and are in conformance with the guidelines. The review will be interdisciplinary and conducted under existing rules which provide for cooperation, coordination, and consultation with affected individuals, federal, state, and local agencies, tribal governments, private landowners, and interested publics.

This review will use a variety of data, including monitoring records, assessments, and knowledge of the locale to assist in making the significant progress determination. Significance will be determined on a case by case basis, considering site potential, site condition, weather and financial commitment. It is anticipated there will be cases where numerous years will be needed to determine direction and magnitude of trend.

Upon completion of review, the authorized officer shall take appropriate action as soon as practicable but no later than the start of the next grazing year upon determining that the existing grazing management practices or level of use on public land are significant factors contributing to failure to achieve the standards and conform with the guidelines that are made effective under 43 CFR 4180.2. Appropriate action means implementing actions that will result in significant progress toward fulfillment of the standards and significant progress toward conformance with guidelines.

Livestock grazing will continue where significant progress toward meeting standards is being made. Additional activities and practices would not be needed on such allotments. Where new activities or practices are required to assure significant progress toward meeting standards, livestock grazing use can continue contingent upon determinations from monitoring data that the implemented actions are effective in making significant progress toward meeting the standards. In some cases, additional action may be needed as determined by monitoring data over time.

New plans will incorporate an interdisciplinary team approach (Arizona BLM Interdisciplinary Resource Management Handbook, April 1995). The terms and conditions for permitted grazing in these areas will be developed to comply with the goals and objectives of these plans which will be consistent with the standards and guidelines.

ARIZONA STANDARDS AND GUIDELINES

Arizona Standards and Guidelines (S&G) for grazing administration have been developed through a collaborative process involving the Bureau of Land Management State S&G Team and the Arizona Resource Advisory Council. Together, through meetings, conference calls, correspondence, and Open Houses with the public, the BLM State Team and RAC prepared Standards and Guidelines to address the minimum requirements outlined in the grazing regulations. The Standards and Guidelines, criteria for meeting Standards, and indicators are an

integrated document that conforms to the fundamentals of rangeland health and the requirements of the regulations when taken as a whole. Upland sites, riparian-wetland areas, and desired resource conditions are each addressed by a standard and associated guidelines.

Standard 1: Upland Sites

Upland soils exhibit infiltration, permeability, and erosion rates that are appropriate to soil type, climate and landform (ecological site).

Criteria for meeting Standard 1:

Soil conditions support proper functioning of hydrologic, energy, and nutrient cycles. Many factors interact to maintain stable soils and healthy soil conditions, including appropriate amounts of vegetative cover, litter, and soil porosity and organic matter. Under proper functioning conditions, rates of soil loss and infiltration are consistent with the potential of the site.

Ground cover in the form of plants, litter or rock is present in pattern, kind, and amount sufficient to prevent accelerated erosion for the ecological site; or ground cover is increasing as determined by monitoring over an established period of time.

Signs of accelerated erosion are minimal or diminishing for the ecological site as determined by monitoring over an established period of time.

As indicated by such factors as:

Ground Cover

- litter
- live vegetation, amount and type (e.g., grass, shrubs, trees, etc.)
- rock

Signs of erosion

- flow pattern
- gullies
- rills
- plant pedestaling

Exceptions and exemptions (where applicable):

None

Guidelines:

1-1. Management activities will maintain or promote ground cover that will provide for infiltration, permeability, soil moisture storage, and soil stability appropriate for the ecological sites within management units. The ground cover should maintain soil organisms and plants and animals to support the hydrologic and nutrient cycles, and energy flow. Ground cover and signs of erosion are surrogate measures for hydrologic and nutrient cycles and energy flow.

1-2. When grazing practices alone are not likely to restore areas of low infiltration or permeability, land management treatments may be designed and implemented to attain improvement.

Standard 2: Riparian-Wetland Sites

Riparian-wetland areas are in properly functioning condition.

Criteria for meeting Standard 2:

Stream channel morphology and functions are appropriate for proper functioning condition for existing climate, landform, and channel reach characteristics. Riparian-wetland areas are functioning properly when adequate vegetation, land form, or large woody debris is present to dissipate stream energy associated with high water flows.

Riparian-wetland functioning condition assessments are based on examination of hydrologic, vegetative, soil and erosion-deposition factors. BLM has developed a standard checklist to address these factors and make functional assessments. Riparian-wetland areas are functioning properly as indicated by the results of the application of the appropriate checklist.

The checklist for riparian areas is in Technical Reference 1737-9 "Process for Assessing Proper Functioning Condition." The checklist for wetlands is in Technical Reference 1737-11 "Process for Assessing Proper Functioning Condition for Lentic Riparian-Wetland Areas."

As indicated by such factors as:

- Gradient
- Width/depth ratio
- Channel roughness and sinuosity of stream channel
- Bank stabilization
- Reduced erosion
- Captured sediment
- Ground-water recharge
- Dissipation of energy by vegetation

Exceptions and exemptions (where applicable):

- Dirt tanks, wells, and other water facilities constructed or placed at a location for the purpose of providing water for livestock and/or wildlife and which have not been determined through local planning efforts to provide for riparian or wetland habitat are exempt.
- Water impoundments permitted for construction, mining, or other similar activities are exempt.

Guidelines:

2-1. Management practices maintain or promote sufficient vegetation to maintain, improve or restore riparian-wetland functions of energy dissipation, sediment capture, groundwater recharge and stream bank stability, thus promoting stream channel morphology (e.g., gradient, width/depth ratio, channel roughness and sinuosity) and functions appropriate to climate and landform.

2-2. New facilities are located away from riparian-wetland areas if they conflict with achieving or maintaining riparian-wetland function. Existing facilities are used in a way that does not conflict with riparian-wetland functions or are relocated or modified when incompatible with riparian-wetland functions.

2-3. The development of springs and seeps or other projects affecting water and associated resources shall be designed to protect ecological functions and processes.

Standard 3: Desired Resource Conditions

Productive and diverse upland and riparian-wetland plant communities of native species exist and are maintained.

Criteria for meeting Standard 3:

Upland and riparian-wetland plant communities meet desired plant community objectives. Plant community objectives are determined with consideration for all multiple uses. Objectives also address native species, and the requirements of the Taylor Grazing Act, Federal Land Policy and Management Act, Endangered Species Act, Clean Water Act, and appropriate laws, regulations, and policies.

Desired plant community objectives will be developed to assure that soil conditions and ecosystem function described in Standards 1 and 2 are met. They detail a site-specific plant community, which when obtained, will assure rangeland health, State water quality standards, and habitat for endangered, threatened, and sensitive species. Thus, desired plant community objectives will be used as an indicator of ecosystem function and rangeland health.

As indicated by such factors as:

- ☐ ☐ Composition
- ☐ ☐ Structure
- ☐ ☐ Distribution

Exceptions and exemptions (where applicable):

Ecological sites or stream reaches on which a change in existing vegetation is physically, biologically, or economically impractical.

Guidelines:

3-1. The use and perpetuation of native species will be emphasized. However, when restoring or rehabilitating disturbed or degraded rangelands, non-intrusive, non-native plant species are appropriate for use where native species (a) are not available, (b) are not economically feasible, (c) cannot achieve ecological objectives as well as non-native species, and/or (d) cannot compete with already established non-native species.

3-2. Conservation of Federal threatened or endangered, proposed, candidate, and other special status species is promoted by the maintenance or restoration of their habitats.

3-3. Management practices maintain, restore, or enhance water quality in conformance with State or Federal standards.

3-4. Intensity, season and frequency of use, and distribution of grazing use should provide for growth and reproduction of those plant species needed to reach desired plant community objectives.

3-5. Grazing on designated ephemeral (annual and perennial) rangeland may be authorized if the following conditions are met: ephemeral vegetation is present in draws, washes, and under shrubs and has grown to useable levels at the time grazing begins;

- ☐ ☐ sufficient surface and subsurface soil moisture exists for continued plant growth;
- ☐ ☐ serviceable waters are capable of providing for proper grazing distribution;
- ☐ ☐ sufficient annual vegetation will remain on site to satisfy other resource concerns, (i.e., watershed, wildlife, wild horses and burros); and
- ☐ ☐ monitoring is conducted during grazing to determine if objectives are being met.

3-6. Management practices will target those populations of noxious weeds which can be controlled or eliminated by approved methods.

3-7. Management practices to achieve desired plant communities will consider protection and conservation of known cultural resources, including historical sites, and prehistoric sites and plants of significance to Native American peoples.